

# PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

### Sliding Clasp Fasteners

We, LIGHTNING FASTENERS LIMITED, a British Company, of Imperial Chemical House, Millbank, London, S.W.1, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to improvements in sliding-clasp fasteners with separable stringers and in particular to a separable connecting device for the stringers.

It is known that with sliding-clasp fasteners having such a device it is at present normal to use the plastic injection moulding process to form the device.

In order to prevent fray of the end of the tape carrying the fastener elements, it has been found desirable to provide both sides of the end portion with plastics material at the same time as the male and female parts, i.e. the pin and box respectively, are made for the connecting device.

This provision of plastics material also serves as a reinforcing means in the engagement of the said parts with the tapes which support them, bearing in mind that these parts should ensure precise location of the first fastener element on each stringer to allow engagement of their elements.

But if this question of centering the tape presented a difficulty, another and no less serious difficulty remained in the connection between sewing threads, elements and moulded parts when making connecting devices moulded on to fasteners with sewn-on elements. In practice the rigidity of the moulded parts and the flexibility of the tape and stitching may cause the threads to break where the two materials intersect.

According to the invention a sliding-clasp fastener comprises a pair of stringer tapes having coupling elements formed from a

plastics filament attached thereto by one or more lines of stitching, a moulded plastics separable connecting device for the stringers comprising a pin member and a box member, each secured to one end of a stringer and each having an integral, longitudinally tapering prolongation on one or both sides of the stringer extending along the line of stitching at least to include the base of the first coupling element.

Preferably the prolongation is in the form of a truncated cone or pyramid and does not extend laterally beyond the generating line of the coupling elements.

The cone or pyramid has the advantage that its flexibility increases progressively from its end adjacent its associated member of the connecting device to its other end thereby reducing the risk of thread breakage at the point where the seam line and tape emerge from said other end of the prolongation. The positioning of the first element is also effectively ensured.

Furthermore, the cone or pyramid which connects to the first element, ensures sealing of the mould while the assembly is being made, and thus prevents the plastics material injected therein from squirting out of the mould.

One embodiment of a sliding-clasp fastener incorporating an improved separable connecting device in accordance with the invention is described below, merely as an example and in no way limitative, with reference to the attached drawing wherein:—

Figure 1 shows one part of the connecting device, from the side;

Figure 2 shows this part seen from above;

Figures 3—6 show in section along the line III—III various sections which may be given to the reinforcement in its end zone; and

Figures 7—10 show in section along the

[Price 4s. 6d.]

line VII—VII various sections which may be given to the reinforcement in the zone adjacent the separable device.

5 In the embodiment shown in Figures 1 and 2, the end of one of the sliding-clasp fastener tapes 1 is provided with the pin member 2 of the separable device, produced on the tape by moulding an injected plastics material.

10 The pin member 2 is moulded at the same time as ribs 3 and 4 and adheres to tape 1 on both its surfaces.

15 The ribs are obtained by means of longitudinal grooves formed in the mould. Spikes or pins placed on both sides of the mould ensure centralisation of the tape during moulding, and on removal from the mould the small imprints 5 of the spikes or pins remain.

20 Figures 3—6 show sections which may be given to the reinforcement ribs 3, and Figures 7—10 those which may be given to ribs 4 reduced from the pin member 2.

25 The pin member 2 is prolonged into a cone 6 integral therewith, which on each side of the tape cover the sewing threads 7 and the base of the first element 8, and terminates at the base of the second element on

the generating line of said element: this ensures sealing of the mould during the moulding process.

#### WHAT WE CLAIM IS:—

30 1. A sliding-clasp fastener comprising a pair of stringer tapes having coupling elements formed from a plastics filament attached thereto by one or more lines of stitching, a moulded plastics separable connecting device for the stringers comprising a pin member and a box member each secured to one end of a stringer and each having an integral, longitudinally tapering prolongation 40 on one or both sides of the stringer extending along the line of stitching at least to include the base of the first coupling element.

2. A sliding-clasp fastener according to claim 1 in which the prolongation is in the form of a truncated cone or pyramid. 45

3. A sliding-clasp fastener according to claim 1 or claim 2 in which plastics reinforcement ribs are moulded to the terminal portion of the tape of each stringer adjacent the 50 separable connecting device.

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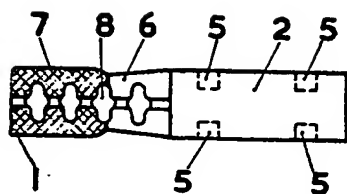


FIG. 1.

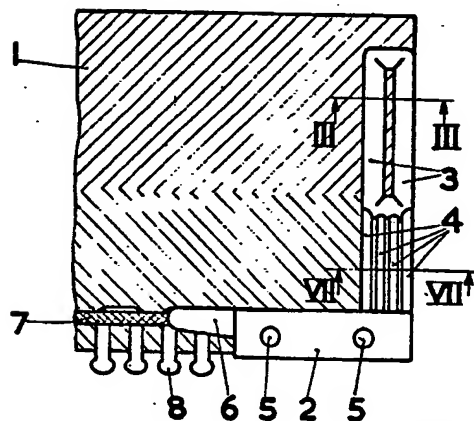


FIG. 2.

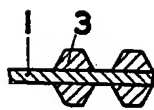


FIG. 3.

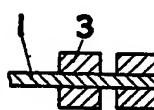


FIG. 4.

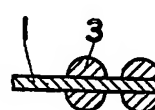


FIG. 5.

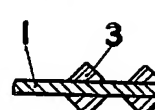


FIG. 6.

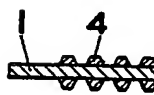


FIG. 7

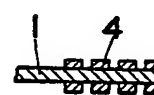


FIG. 8



FIG. 9.



FIG. 10.